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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,991	03/05/2002	David M. Tallman	01-EDP-450	8753

7590

06/19/2003

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EXAMINER

NGUYEN, VINCENT Q

ART UNIT

PAPER NUMBER

2858

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

10/090,991

Applicant(s)

TALLMAN ET AL.

Examiner

Vincent Q Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 14, 15 and 17-25 is/are rejected.
- 7) ☒ Claim(s) 11-13 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Information Disclosure Statement***

Please submit the date (Month/year) for the Greenlee document ("Circuit Tester, Locator, and Tracer").

### ***Objection***

1. Claim 1, line 5, the limitation of "proximate said arcing fault" is confusing since it is unclear whether the means for detecting is (located) proximate to the fault or the characteristics of the fault are proximate the fault. Appropriate correction is required. For the purpose of examination, the examiner assumes that the characteristics of the fault are proximate the fault.

### ***Drawings***

2. The drawings are objected to because the legend such as --Prior Art-- (figure 6) is inconsistent with the disclosure (Page 5). The examiner wonders whether the legend is an inadvertently error? The symbols describing the switches (122, 124) (Figure 5) are unusual since the symbols are usually used as capacitors. Appropriate correction and/or explanation is required.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-6, 9, 14, 20-22, are rejected under 35 U.S.C. 102(e) as being anticipated by Sanderson (6,545,485).

Regarding claim 1, Sanderson discloses a device for detecting arcing fault in an electrical system comprising (Figures 1-5) means (100, 200, 300, 400) for detecting at least one of the characteristics (noise, rf, ultrasonic sound) (Column 4, lines 10-17) of said arcing fault proximate said arcing fault (Column 5, lines 13-67) and outputting a responsive signal ("spectral signature") (Column 6, line 26); and means (160, 200, 202, 360, 362, 370) for annunciating said responsive signal when said means (100, 200, 300, 400) for detecting is proximate said arcing fault (by elements 130, 140, 150, 170,

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331-336), in order to locate said arcing fault in said electrical system (Column 1, lines 40-41; column 3, lines 61-65).

Regarding claims 2, 3, Sanderson discloses said means for annunciating comprises a visual indicator (360, 362, 370) (figure 4).

Regarding claims 4, 5, Sanderson discloses said means for annunciating comprises an audible indicator (160) (Figure 1).

Regarding claim 6, Sanderson discloses one of said at least characteristics (noise) is a radio frequency signal (Column 1, lines 14-15, line 40); and means (400) (Figure 5) for detecting includes an antenna (Column 7, lines 35) for receiving the radio frequency signal and a radio frequency detector for detecting the received radio frequency signal (Column 7, lines 28-41).

Regarding claim 9, Anderson discloses one of said at least one of the characteristics is a signal having a frequency (RF) (See also figures 6-8); and wherein said means (400) for detecting includes means (410) for receiving said signal having the frequency (RF) and outputting a corresponding electrical signal, and means (412, 422) for detecting the electrical signal.

Regarding claims 14, 20, 21, Sanderson discloses a device (Figures 1-5) for detecting faults (Corona, RFI) (Column 2, lines 60-63) in an electrical system, and for detecting and locating an arcing fault (spark) (column 2, lines 65-66) in said electrical system, said arcing fault having a plurality of characteristics (noise, RF) (Column 5, lines 14-67), said testing device comprising (Figures 1-5) means (100, 200, 300, 400) for testing said electrical system to detect at least one fault in said electrical system;

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means (110, 210, 310,410) for detecting at least one of the characteristics of said arcing fault proximate said arcing fault and outputting a responsive signal (130, 140, 150) (Figure 1); and means (160) for annunciating said responsive signal when said means for detecting is proximate said arcing fault.

Regarding claim 22, Sanderson discloses means (370) for detecting and annunciating includes a display for visually annunciating said at least one fault.

5. Claim 25 is rejected under 35 U.S.C. 102(b) as being anticipated by Anderson (5,608,328).

Regarding claim 25, Anderson discloses a device comprising (figures 1, 12) means (10) for producing an arcing signal to cause at least one of the characteristics of said arcing fault (column 1, lines 34-50); and a testing device comprising (Figures 1, 12): means (52) for detecting said at least one of the characteristics of said arcing fault proximate said arcing fault and outputting a responsive signal (figure 12), and means (Speaker) for annunciating said responsive signal when said means for detecting is proximate said arcing fault.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7, 8, are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson (6,545,485) in view of Sanderson (5,608,328).

Regarding claims 7, 8, Sanderson (6,545,485) discloses every subject matter recited in the claims except for the means for detecting includes a pick-up coil. Anderson (5,608,328) discloses a system similar to that of Anderson (6,545,485) and further discloses (figure 1) means (50) for detecting includes a pick-up coil (52) (See also column 4, lines 64-65) for the purpose of enhancing the sensitivity of the detecting means (Column 7, lines 55-56). It would have been obvious to one of ordinary skilled in the art at the time the invention was made to incorporate a pick-up coil as taught by Anderson (5,608,328) into the system of Anderson (6,545,485) because Anderson (5,608,328) taught that the antenna is typically more sensitive to high frequency signals (Column 7, lines 55-56).

8. Claim 10, is rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson (6,545,485) in view of Vokey (6,437,572).

Regarding claim 10, Sanderson discloses a device for detecting and locating an arcing fault comprising (figures 1-5) means (100, 200, 300, 400) for detecting at least one of the characteristics (noise, rf, ultrasonic sound) (Column 3, lines 25-27) of said arcing fault, and outputting a responsive signal {(130, 140, 150) (Figure 1); (output of 420) (figure 5)}; and means (160) for annunciating said responsive signal when said means (100, 200, 300, 400) for detecting is proximate said arcing fault. Anderson does

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not disclose means for locating the electrical conductors of said electrical system. Vokey discloses means (10, 26) (Figures 1, 2) for locating and identifying the underground utilities, such as electrical conductors (Cables), for the purpose of enhancing the maintenance and service of the underground utilities (Column 1, lines 24-37). It would have been obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the means as taught by Vokey into the system of Sanderson for locating the electrical conductors because the underground utilities, such as electrical conductors, would have been desirable to be clearly located in order to have them serviced or maintained (See Vokey's column 1, lines 24-26, lines 36-37).

9. Claims 15, 17-19, 23, 24, are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson (6,545,485) in view of Mackenzie (6,072,317).

Regarding claim 15, Sanderson does not discloses means for testing includes means for conducting a ground fault test of said electrical system. Mackenzie discloses (Figures 1, 2) a system similar to that of Sanderson and further discloses (Figure 2) means (23) for conducting a ground fault test of said electrical system for the purpose of verifying people or ground fault protection provided by the circuit breaker (Column 2, lines 28-31). It would have been obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the means for conducting a ground fault test as taught by Mackenzie into the system of Sanderson because Mackenzie taught that (column 2, lines 12-35) the combination of the ground fault and arcing fault testing would improve the performance of the testability especially remote from the detector.



Regarding claims 17-19, 23, 24, Sanderson does not disclose means for testing includes means for conducting an open neutral, line or ground test of said electrical system. Mackenzie discloses a system similar to that of Sanderson for the purpose of improving the testability (Column 2, lines 12-35) and further discloses (Figure 1) means (23) for testing includes means for conducting an open neutral, line or ground test, receptacle, and proper wiring of said electrical system (Column 3, 59-65). It would have been obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the means as taught by Mackenzie into the system of Sanderson for the same reason as set forth in claim 15.

***Allowable Subject Matter***

10. Claims 11-13, 16, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does teach or suggest a testing device having means for locating the electrical conductors comprises means for generating a signal having a frequency in said electrical conductors, means for detecting said signal having the frequency proximate one of said electrical conductors; and means for annunciating a second responsive signal when the means for detecting said signal having the frequency is proximate said one of said electrical conductors, as recited in the dependent claim 11;

means for conducting a ground fault test includes means for adjusting a load between said first and second conductors, as recited in the dependent claim 16; and in combination of the claims.

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Patent No. 5,729,145, discloses a system for detecting the arcing fault anywhere in a house which monitors the waveform of wideband high frequency noise and examining the detected noise for patterns.

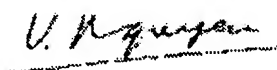
### ***Contact Information***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent Q Nguyen whose telephone number is (703) 308-6186. The examiner can normally be reached on Mon-Fri 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on (703) 308-0750. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-5841 for regular communications and (703) 308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Vincent Q. Nguyen



June 13, 2003